

### ABSTRACT OF THE DISCLOSURE

A linear tuning varactor circuit has the first single-end varactor circuit, the second single-end varactor circuit and a voltage divider. The first single-end varactor circuit has tuning terminal receiving the tuning voltage to change the capacitance thereof. The second single-end varactor circuit has a reference voltage terminal receiving the reference with constant voltage. The first single-end varactor circuit and the second single-end varactor circuit are coupled to each other in series and have a node. The voltage divider is coupled to the tuning terminal, the reference voltage terminal and the node. The node has a divided voltage, which results from dividing a voltage difference between the tuning voltage and the reference voltage by the voltage divider with a pre-set voltage dividing ratio.